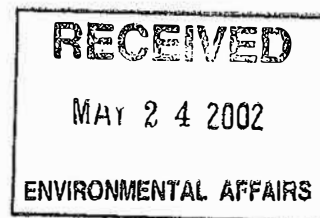


May 23, 2002

Ms. Rose Myers  
Indiana Department of Environmental Management  
Office of Land Quality  
100 N. Senate Avenue  
P. O. Box 6015  
Indianapolis, IN 46206-6015



**Subject: Tier II Sampling and Analysis Report  
Gary Sanitary Landfill  
Gary, Indiana**

Telephone

Dear Ms. Myers:

630.574.2006

On behalf of the City of Gary Department of Environmental Affairs, Earth Tech is submitting 3 copies of the report referenced above for your review and approval.

Facsimile

630.574.2007

As follow-up to our April 12, 2002 meeting and the subsequent May 2, 2002 letter from IDEM, Earth Tech conducted a Tier II Sampling and Analysis Test at the Gary Landfill in early May 2002. The work performed and results obtained are contained in the attached report.

On behalf of the City of Gary, we appreciate the opportunity to submit these results for consideration. If you have any questions or need additional information, please do not hesitate to call us at (616) 942-9600 or (630) 574-2006.

Very Truly Yours,

Earth Tech, Inc.

  
Mike Niemann  
Senior Scientist

  
Andrew J. Querio, P.E.  
Project Manager

attachment

cc: Tom Daugherty, P.E. (IDEM)  
Dorreen Carey (City of Gary Department of Environmental Affairs)  
Bob Strimbu (City of Gary Department of Environmental Affairs)

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A tyco INTERNATIONAL LTD. COMPANY

# **Tier 2 Landfill Gas Sampling and Analysis Report Gary Sanitary Landfill City of Gary, Indiana**

*Prepared for:*

City of Gary  
Department of Environmental Affairs  
504 Broadway, Suite 10112  
Gary, IN 46402

*Prepared by:*

Earth Tech, Inc.  
3121 Butterfield Road  
Oak Brook, IL 60521

*May 2002*



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## **1.0 EXECUTIVE SUMMARY**

Gary Sanitary Landfill is a closed facility located in Gary, Indiana, and is owned by the City of Gary. The landfill began accepting waste during the mid 1950's (listed as 1955 for the purposes of calculating emissions in the facilities Title V application), and has a final total design capacity of 3.379 million megagrams. Since this capacity is over 2.5 million megagrams, the facility is required to determine, under the New Source Performance Standards (NSPS) for new Municipal Solid Waste (MSW) Landfills promulgated on March 12, 1996, the emissions of non-methane organic compounds (NMOC).

A Tier II test was conducted at the facility in May 2002 to determine a site-specific NMOC concentration pursuant to an agreement between IDEM and the City of Gary.

Based on the sampling results provided in this report, NSPS gas collection and control requirements are not currently applicable and did not apply to the facility at closure (period of maximum gas generation), because non-methane organic compounds (NMOC) emissions have not exceeded 50 megagrams per year (Mg/yr). The measured site-specific NMOC concentration was determined to be 11.6 ppm NMOC as hexane. This value was used in the NSPS equation to calculate NMOC emissions of 1 Mg in 1997 (waste cessation year for the landfill – maximum emissions date), and 1 Mg in 2002. In each case, the facility did not exceed 50 Mg/yr. Each case evaluation demonstrates that the facility had emissions 2% of those mandating the installation of a gas collection system.



## **2.0 BACKGROUND**

### **2.1 FACILITY DESCRIPTION**

Gary Sanitary Landfill is a closed facility located in Gary, Indiana, and is owned by the City of Gary. The landfill began accepting waste in the mid 1950's. The landfill is closed with approximately 75 acres of waste in place that is at least two years old (if closed) and, as such, is suitable for Tier 2 sampling. Gary Landfill primarily operated as municipal solid waste landfill, although no records are available for inspection. Since no data is available for waste receipts, the NMOC calculations are based on 40 CFR 60.754(a)(1)(ii).

### **2.2 PROJECT OBJECTIVES AND APPROACH**

The purpose of this work is to determine a site-specific NMOC concentration for use at the Gary Sanitary Landfill. The Tier 2 landfill gas sampling and analysis was conducted in accordance with 40 CFR 60.754. This sampling follows EPA Reference Method 25C, for NMOC concentration, and Method 3C, for nitrogen concentration. The determined concentration was used with the equation specified in §60.754(a)(1)(ii) to evaluate the landfill mass emission rate of NMOC in Mg/yr.

### **3.0 SAMPLING METHODOLOGY**

#### **3.1 GAS SAMPLING**

The Gary Sanitary Landfill currently has 25 passive solar flares and a single candlestick flare connected to 8 perimeter landfill gas extraction wells. A combination of sampling from the solar flares, the individual wells connected to the single flare, and from sampling probes was conducted. If field checks (with a Landtec field gas analyzer) showed greater than 40 percent methane was present (with little or no oxygen), the vents or wells were used for sampling. Each vent or well replaced the need for one probe, but an even distribution of vents, wells and probes was maintained over the landfill. The passive flares were shut off and capped and allowed to equilibrate for approximately 24 hours prior to sampling.

Where the flares were not utilized, pre-cleaned 5.25 foot long by 0.38-inch outside-diameter steel sampling rods were inserted through the landfill cover. Each sample rod was inserted at least 3 feet (0.9 meters) into the underlying landfill waste material. Each sample rod was sealed at the ground surface with bentonite to ensure a good seal between the landfill cover and the sample rods. After the sample rods were sealed in place, Teflon covers were placed on top of the rods to prevent ambient air from entering the rods or gases from seeping out of the landfill gas sampling location.

Sampling was delayed approximately 24 hours from the time the sample probes were inserted into the landfill to ensure the bentonite was hydrated and to allow the landfill gas to reach equilibrium within the sample rod. After 24 hours, the methane, carbon dioxide, and oxygen levels in the sample rods were measured with a field gas analyzer, to assure the samples would be valid. An evacuated sample canister was then attached to each sample rod. Atmospheric Analysis and Consulting, Inc. provided the pre-cleaned four-liter stainless steel gas canisters. The landfill gas sample was collected at a flow rate of less than 500 ml/min. If the gauge pressure at the sample probe was not more than 0.05 inch H<sub>2</sub>O or the methane and carbon dioxide concentrations did not total greater than 80%, the sample probe was not used and a new sampling site was selected.

All samples were logged in the field, and chain-of-custody forms were used for each of the samples. The field data appears in Appendix A.

#### **3.2 SAMPLING LOCATIONS**

The NSPS requires collection of two samples per hectare of landfill surface area in which waste has been in-place for a minimum of two years. At the Gary Sanitary Landfill, approximately 75 acres, or 30.35 hectares, were filled between 1955 and 1998. Pursuant to 40 CFR 60.754(a)(3), landfills larger than 25 hectares need only collect 50 samples. As such, 50 samples were collected from the site. Sampling locations are shown on the map on Figure 1.

## 4.0 LABORATORY ANALYSIS

Atmospheric Analysis and Consulting, Inc., Ventura, California, performed the laboratory analysis for the samples. Samples were analyzed using EPA Reference Methods 25C and 3C. Reference Method 25C provides results for NMOC, carbon dioxide, and methane. Nitrogen and oxygen content were analyzed in the laboratory using EPA Reference Method 3C.

The methane, carbon dioxide, oxygen, nitrogen, and NMOC content for each sample are shown in Table 2. NMOC concentrations for all samples were averaged to determine the site-specific NMOC concentration. The laboratory documentation from the analysis of the samples from Methods 25C and 3C are included in Appendix B of this report. All samples where nitrogen exceeded the allowable limit were not included in the average.

**TABLE 1**  
**GARY LANDFILL METHODS 25C AND 3C GAS DATA**

Client ID	%Methane	%CO2	%Oxygen	%Nitrogen	NMOC as Methane (ppm)	NMOC as Hexane (ppm)
26	56.5	37.7	2.41	3.35	25.80	4.30
30	1.0	0.4	17.66	80.94	10.91	1.82
31	60.2	36.9	2.86	ND	22.74	3.79
36	59.8	35.2	2.22	2.77	32.92	5.49
44	21.4	10.8	11.27	56.54	ND	0.00
53	32.8	17.1	8.16	41.88	20.63	3.44
54	60.3	34.2	0.90	4.61	125.52	20.92
60	58.5	36.1	1.35	4.05	96.11	16.02
62	68.1	25.0	1.14	5.81	50.29	8.38
63	56.7	34.0	0.86	8.44	73.32	12.22
72	57.4	36.8	1.08	4.65	26.92	4.49
78	60.4	37.7	0.82	1.05	36.02	6.00
80	57.4	37.1	1.02	4.45	92.59	15.43
81	61.1	37.2	0.90	0.74	101.50	16.92
83	57.7	38.2	2.25	1.90	19.73	3.29
84	0.2	ND	15.85	83.80	4.78	0.80
89	62.0	35.7	2.28	ND	206.22	34.37
92	65.1	33.5	1.44	ND	43.60	7.27
96	56.0	35.7	1.68	6.65	40.07	6.68
99	59.1	35.8	2.94	2.17	82.03	13.67
102	36.0	19.8	6.76	37.39	24.64	4.11
103	60.6	37.3	2.13	ND	13.80	2.30
104	59.5	36.2	1.63	2.60	89.56	14.93
105	60.5	37.5	1.93	ND	40.81	6.80
128	45.0	30.0	1.55	23.40	20.68	3.45
131	53.8	34.8	2.54	8.90	27.08	4.51
138	52.4	32.4	2.29	12.84	35.04	5.84
140	61.8	36.6	1.56	ND	116.07	19.34
141	ND	0.2	16.49	83.30	7.43	1.24

Client ID	%Methane	%CO2	%Oxygen	%Nitrogen	NMOC as Methane (ppm)	NMOC as Hexane (ppm)
147	62.0	37.0	1.02	ND	84.10	14.02
149	57.1	35.7	1.55	5.63	116.07	19.34
162	64.9	28.6	1.12	5.31	41.55	6.93
163	59.7	37.0	1.63	1.63	79.45	13.24
164	63.3	33.7	1.41	1.58	21.93	3.65
165	59.9	34.8	2.53	2.73	125.59	20.93
166	61.1	35.0	1.56	2.37	151.96	25.33
167	37.7	7.9	9.50	44.91	24.30	4.05
169	60.7	36.4	1.51	1.42	97.46	16.24
173	64.9	33.0	1.96	0.18	48.26	8.04
174	60.6	36.9	2.48	ND	113.59	18.93
181	61.0	37.8	1.01	0.12	77.75	12.96
184	60.4	36.2	1.38	1.99	155.48	25.91
185	58.1	31.2	2.80	7.95	36.22	6.04
192	53.8	34.7	2.25	9.16	27.68	4.61
193	65.4	31.7	1.33	1.56	33.02	5.50
195	57.2	37.3	0.91	4.54	27.57	4.60
197	0.9	2.3	15.65	81.17	4.32	0.72
206	22.8	13.1	11.20	52.98	8.29	1.38
209	62.1	36.1	1.12	0.75	71.99	12.00
1000	0.5	0.5	16.53	82.50	9.58	1.60
<b>Average</b>	<b>59.9</b>	<b>35.3</b>	<b>1.7</b>	<b>3.1</b>	<b>69.4</b>	<b>11.6</b>

Note: The Averages are for all samples that show a Nitrogen concentration of below 20%.

Results of the landfill gas analysis are consistent with values expected for landfill gas (high methane and carbon dioxide, and low oxygen and nitrogen). The results of methane, carbon dioxide, and oxygen are also fairly consistent with the field-measured data. Method 25C requires the nitrogen and oxygen content to be less than 20% and 5%, respectively. All results for nitrogen were below 10% (100,000 ppm), and all results for oxygen were below 5% (50,000 ppm). In general, the data suggests that sample procedures were conducted correctly and the samples consisted of landfill gas.

## 5.0 DATA CALCULATIONS AND EVALUATION

The site-specific average NMOC concentration was used in the equation specified in §60.754(a)(1)(ii) to calculate the 1997 and 2002 estimated Tier 2 NMOC emissions for Gary Landfill. The equation specified at §60.754(a)(3)(i) and the parameters used to estimate NMOC emissions are shown below:

**§60.754(a)(1)(ii) Equation** (For landfills where the annual acceptance rate is unknown)

$$M_{\text{NMOC}} = 2L_0 R (e^{-kc} - e^{-kt}) (C_{\text{NMOC}})(3.6 \times 10^{-9})$$

where,

$M_{\text{NMOC}}$	=	Total mass emission rate of NMOC from the landfill, Mg/yr	
$L_0$	=	Refuse methane generation potential*	= 170 ( $\text{m}^3/\text{Mg}$ )
$R$	=	Average annual acceptance rate	= varies ( $\text{Mg}$ )**
$k$	=	Methane generation rate constant*	= 0.05 (1/yr)
$t$	=	Age of the $i^{\text{th}}$ landfill cell	= varies (yrs)
$c$	=	time since closure, years. For active landfill $c = 0$ and $e^{-kc} = 1$	
$C_{\text{NMOC}}$	=	Concentration of NMOC	= 11.6 (ppm as hexane)
$3.6 \times 10^{-9}$	=	Conversion factor	

\* Default values (taken from 40 CFR Section 60.754 (a)(1))

\*\* An attachment of the full  $i^{\text{th}}$  section summation for  $t_i$  and  $M_i$  is provided in Appendix C.

The waste data for the purposes of this evaluation was determined based on the Design Capacity Report submitted to the agency on 6/10/1996.

Maximum NMOC emissions rate:

$$M_{\text{NMOC}} = 1 \text{ Mg/yr}$$

Based on the results, the NSPS Subpart WWW gas collection and control requirements do not apply to the facility because the NMOC emission rate is less than 50 Mg/yr. Spreadsheet calculations are attached in Appendix C.

**FIGURE 1**

**GARY SANITARY LANDFILL SAMPLE LOCATION MAP**

**APPENDIX A**

**FIELD DATA**

**Gary Landfill  
Tier II Field Results**

Sample	Location		Install Date	Summa Sample		Gas Quality					Sample ID
	Northing	Eastng		Date	Time	CH4	CO2	O2	Balance	Pressure	
P-1	5485.71	4729.9	5/1/02	5/3/02	10:50	0.0	0.0	21.1	70.9	0.0	141
P-2	5491.54	4576.52	5/1/02	5/2/02	18:35	0.8	0.7	20.6	78.7	0.3	30
P-3	5618.63	4306.96	5/1/02	5/2/02	18:20	1.5	1.2	19.9	77.8	0.5	1000
P-4	5237.98	4090.95	5/1/02	5/2/02	9:20	0.2	0.1	21.1	78.9	0.1	84
P-5	5335.55	3649.61	5/1/02	5/2/02	9:25	63.5	36.1	0.7	0.0	0.2	53
P-6	5332.84	3078.44	5/1/02	5/2/02	18:45	60.1	39.0	0.8	0.0	4.7	166
P-7	5373.19	2690.95	5/1/02	5/2/02	10:10	52.0	13.3	6.3	30.8	0.1	167
P-8	5607.79	2624.61	5/1/02	5/2/02	10:25	62.6	37.0	0.0	0.0	4.6	164
P-9	5775.61	2614.99	5/1/02	5/2/02	10:40	59.1	40.8	0.0	0.3	7.2	103
P-10	6214.9	2583.69	5/1/02	5/2/02	10:55	57.0	42.6	0.0	0.8	2.6	83
P-11	6398	2619.8	5/1/02	5/2/02	4:00	1.6	0.1	20.0	77.8	0.1	197
P-12	6584.41	2655.6	5/1/02	5/2/02	14:30	42.5	27.0	4.9	33.1	0.5	102
P-13	6409.74	2961.26	5/1/02	5/2/02	14:40	57.1	41.9	0.3	0.9	0.6	142
P-14	6465.7	3266.18	5/1/02	5/2/02	14:45	51.5	31.8	3.2	13.5	0.6	185
P-15	6669.94	3548.52	5/1/02	5/2/02	15:10	59.3	40.1	0.0	1.0	6.1	206
P-16	6449.32	3928.28	5/1/02	5/2/02	16:30	44.0	33.6	0.0	22.1	0.5	128
P-17	6169.82	3786.4	5/1/02	5/2/02	17:30	58.2	40.2	1.1	0.9	0.5	209
P-18	5908.63	4049.13	5/1/02	5/2/02	17:50	59.6	39.2	0.0	2.0	0.6	165
SF-1	5787.42	2977.2		5/2/02	7:30	57.5	40.8	0.6	1.5	7.4	149
SF-2	5689.04	3212.65		5/2/02	7:50	60.0	40.0	0.0	0.0	7.2	63
SF-3	5866.37	3285.96		5/2/02	7:55	61.6	38.0	0.0	0.3	5.6	89
SF-4	5717.16	3509.29		5/2/02	8:15	58.5	39.6	0.0	0.0	7.4	174
SF-5	5907.13	3595.86		5/2/02	8:20	58.1	40.6	0.0	0.0	6.8	104
SF-6	5705.02	3813.44		5/2/02	8:30	59.6	40.2	0.0	0.0	8.1	181
SF-7	5565.32	3665.17		5/2/02	8:40	63.6	37.1	0.0	0.0	9.1	184
SF-8	5501.1	3315.15		5/2/02	9:50	62.1	38.1	0.0	0.0	9.0	54
SF-9	5524.77	3013.2		5/2/02	9:40	62.7	37.6	0.0	0.0	7.2	169
SF-10	5674.98	2852.99		5/2/02	13:50	59.1	40.9	0.0	0.0	7.8	163
SF-11	5503.01	2469.77		5/2/02	10:20	63.7	35.8	0.0	0.0	0.9	173
SF-12	5712.28	2472.48		5/2/02	10:35	58.9	39.4	0.0	1.4	2.6	36
SF-13	5912.06	2465.92		5/2/02	10:50	65.8	32.7	0.0	1.7	0.7	162
SF-14	6120.16	2467.89		5/2/02	11:10	58.9	40.6	0.5	0.0	0.9	138
SF-15	6318.7	2467.02		5/2/02	11:25	62.1	34.4	0.6	2.5	1.0	193
SF-16	6520.93	2469.98		5/2/02	11:30	68.1	28.0	0.2	3.9	0.9	62
SF-17	5945.85	2850.94		5/2/02	11:15	57.0	42.7	0.0	0.1	6.7	195
SF-18	6722.89	2468.93		5/2/02	14:10	63.8	36.1	0.0	0.0	0.8	92
SF-19	6915.59	2475.97		5/2/02	14:55	62.2	36.5	0.0	1.4	0.8	44
SF-20	6369.38	3449.55		5/2/02	15:10	56.7	42.6	0.0	0.6	11.2	131
SF-21	6192.89	3222.34		5/2/02	15:30	57.2	42.1	0.0	1.2	10.5	78
SF-22	6229.14	2888.7		5/2/02	15:20	56.0	42.9	0.0	0.9	7.1	26
SF-23	6016.43	3086.38		5/2/02	15:40	58.9	40.7	0.0	0.5	6.1	81
SF-24	6075.23	3394.75		5/2/02	15:45	58.3	41.3	0.0	0.0	6.9	60
SF-25	6517.37	3709.16		5/2/02	15:55	56.9	42.3	0.0	1.4	8.9	72
SF-26	6218.59	3586.22		5/2/02	17:25	57.2	42.8	0.0	0.0	8.2	105
SF-27	6237.1	3914.7		5/2/02	16:40	57.3	42.2	0.0	0.5	9.4	96
SF-28	5997.73	3994.67		5/2/02	17:35	58.9	40.4	0.0	0.7	8.4	99
SF-29	5569.07	3971.13		5/2/02	17:40	57.7	42.4	0.0	0.2	8.3	80
SF-30	5707.13	3962.44		5/2/02	18:00	59.5	40.2	0.0	0.2	7.6	140
SF-31	5780.49	4177.85		5/2/02	18:05	59.0	40.1	0.0	0.1	7.6	147
SF-32	5458.1	4184.14		5/2/02	18:10	57.7	40.1	0.0	1.6	7.5	31
AVERAGE											

Atmospheric Analysis & Consulting (AAC)

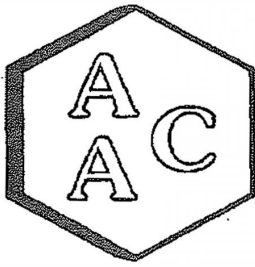
Gas Quality Meter - Earth Tech Gem 2000 - Calibrated 5/2/02 @ 6:00 am

5/2/02 barometric pressure 29.7 - overcast - 50 deg. F

5/3/02 barometric pressure 30.1 - clear - 50 deg. F



**APPENDIX B**  
**LABORATORY ANALYSIS RESULTS**



## Atmospheric Analysis & Consulting, Inc.

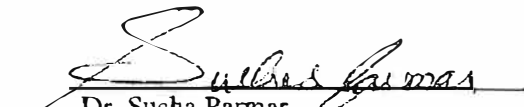
### Laboratory Analysis Report

Client: Earth Tech  
 Project No. 44567 / 300-02-3193  
 Matrix Air  
 Units Percentage (%)

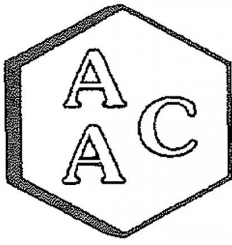
Sampling Date 5/3/2002  
 Receiving Date 5/6/2002  
 Analysis Date 5/6/2002 to 5/9/2002  
 Report Date 5/14/2002

### EPA Method 3C

Detection Limit: 0.1 %		Analyte				
Client ID	AAC ID	Oxygen	Nitrogen	CO	Methane	CO2
163	223193-33	1.6	1.6	ND	59.7	37.0
164	223193-34	1.4	1.6	ND	63.3	33.7
165	223193-35	2.5	2.7	ND	59.9	34.8
166	223193-36	1.6	2.4	ND	61.1	35.0
167	223193-37	9.5	44.9	ND	37.7	7.9
169	223193-38	1.5	1.4	ND	60.7	36.4
173	223193-39	2.0	0.2	ND	64.9	33.0
174	223193-40	2.5	ND	ND	60.6	36.9
181	223193-41	1.0	0.1	ND	61.0	37.8
184	223193-42	1.4	2.0	ND	60.4	36.2
185	223193-43	2.8	7.9	ND	58.1	31.2
192	223193-44	2.3	9.2	ND	53.8	34.7
193	223193-45	1.3	1.6	ND	65.4	31.7
195	223193-46	0.9	4.5	ND	57.2	37.3
197	223193-47	15.7	81.2	ND	0.9	2.3
206	223193-48	11.2	53.0	ND	22.8	13.1
209	223193-49	1.1	0.7	ND	62.1	36.1
1000	223193-50	16.5	82.5	ND	0.5	0.5

  
 Dr. Sucha Parmar  
 President





## Atmospheric Analysis & Consulting, Inc.


### Laboratory Analysis Report

Client: Earth Tech  
 Project No. 44567 / 300-02-3193  
 Matrix Air  
 Units Percentage (%)

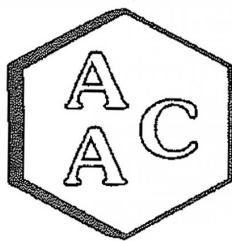
Sampling Date 5/3/2002  
 Receiving Date 5/6/2002  
 Analysis Date 5/6/2002 to 5/9/2002  
 Report Date 5/14/2002

#### EPA Method 3C

Detection Limit: 0.1 %		Analyte				
Client ID	AAC ID	Oxygen	Nitrogen	CO	Methane	CO <sub>2</sub>
26	223193-1	2.4	3.3	ND	56.5	37.7
30	223193-2	17.7	80.9	ND	1.0	0.4
31	223193-3	2.9	ND	ND	60.2	36.9
36	223193-4	2.2	2.8	ND	59.8	35.2
44	223193-5	11.3	56.5	ND	21.4	10.8
53	223193-6	8.2	41.9	ND	32.8	17.1
54	223193-7	0.9	4.6	ND	60.3	34.2
60	223193-8	1.3	4.0	ND	58.5	36.1
62	223193-9	1.1	5.8	ND	68.1	25.0
63	223193-10	0.9	8.4	ND	56.7	34.0
72	223193-11	1.1	4.7	ND	57.4	36.8
78	223193-12	0.8	1.1	ND	60.4	37.7
80	223193-13	1.0	4.5	ND	57.4	37.1
81	223193-14	0.9	0.7	ND	61.1	37.2
83	223193-15	2.2	1.9	ND	57.7	38.2
84	223193-16	15.9	83.8	ND	0.2	ND

  
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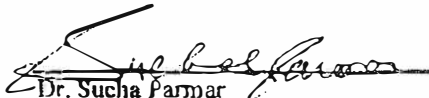
### Laboratory Analysis Report

Client: Earth Tech  
 Project No. 44567 / 300-02-3193  
 Matrix Air  
 Units Percentage (%)

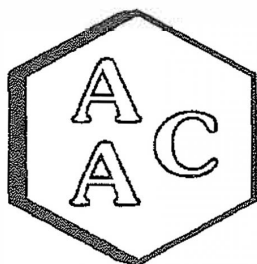
Sampling Date 5/3/2002  
 Receiving Date 5/6/2002  
 Analysis Date 5/6/2002 to 5/9/2002  
 Report Date 5/14/2002

### EPA Method 3C

Detection Limit: 0.1 %		Analyte				
Client ID	AAC ID	Oxygen	Nitrogen	CO	Methane	CO2
89	223193-17	2.3	ND	ND	62.0	35.7
92	223193-18	1.4	ND	ND	65.1	33.5
96	223193-19	1.7	6.7	ND	56.0	35.7
99	223193-20	2.9	2.2	ND	59.1	35.8
102	223193-21	6.8	37.4	ND	36.0	19.8
103	223193-22	2.1	ND	ND	60.6	37.3
104	223193-23	1.6	2.6	ND	59.5	36.2
105	223193-24	1.9	ND	ND	60.5	37.5
128	223193-25	1.6	23.4	ND	45.0	30.0
131	223193-26	2.5	8.9	ND	53.8	34.8
138	223193-27	2.3	12.8	ND	52.4	32.4
140	223193-28	1.6	ND	ND	61.8	36.6
141	223193-29	16.5	83.3	ND	ND	0.2
147	223193-30	1.0	ND	ND	62.0	37.0
149	223193-31	1.5	5.6	ND	57.1	35.7
162	223193-32	1.1	5.3	ND	64.9	28.6

  
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Date Analyzed 5/6/2002

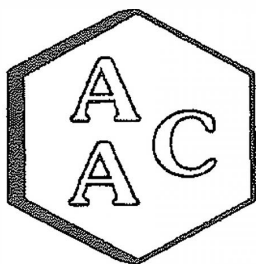
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	Analyte	Units	Sample Analysis
Method Blank	Oxygen	%	ND
	Nitrogen	%	ND
	Carbon Nonoxide	%	ND
	Methane	%	ND
	Carbon Dioxide	%	ND

#### II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
Oxygen	%	10.50	9.21	9.21	0.00	87.71
Nitrogen	%	39.00	36.46	36.46	0.00	93.49
Carbon Nonoxide	%	2.50	2.61	2.58	1.16	103.80
Methane	%	2.00	2.19	2.14	2.31	108.25
Carbon Dioxide	%	2.50	2.59	2.56	1.17	103.00





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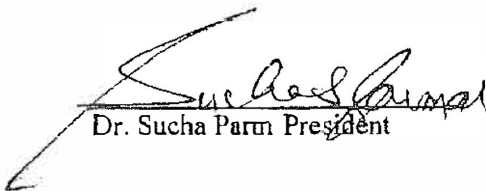
Date Analyzed 5/6/2002

### III-Sample Duplicate Analysis

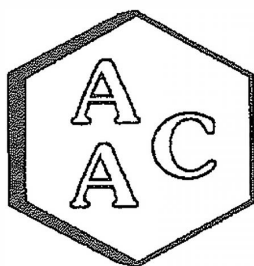
AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-1	Oxygen	%	0.91	0.95	0.93	4.30
223193-1	Nitrogen	%	38.88	38.62	38.75	0.67
223193-1	Carbon Nonoxide	%	0.00	0.00	0.00	0.00
223193-1	Methane	%	22.60	20.93	21.77	7.67
223193-1	Carbon Dioxide	%	15.15	13.90	14.53	8.61

### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-1	Carbon Nonoxide	%	2.55	2.67	104.40	4.60
223193-1	Methane	%	12.67	12.60	87.63	0.55
223193-1	Carbon Dioxide	%	9.55	9.57	91.90	0.21

  
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## Atmospheric Analysis & Consulting, Inc.

### Quality Control/Quality Assurance Report

Date Analyzed 5/7/2002

#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	Oxygen	%	ND
	Nitrogen	%	ND
	Carbon Nonoxide	%	ND
	Methane	%	ND
	Carbon Dioxide	%	ND

#### II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
Oxygen	%	10.50	9.40	9.40	0.00	89.52
Nitrogen	%	39.00	40.04	40.04	0.00	102.67
Carbon Nonoxide	%	2.50	2.58	2.54	1.56	102.40
Methane	%	2.00	2.16	2.15	0.46	107.75
Carbon Dioxide	%	2.50	2.56	2.53	1.18	101.80







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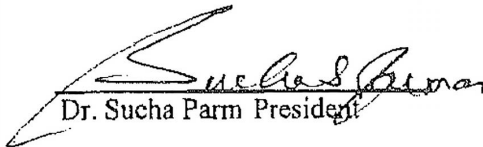
Date Analyzed 5/7/2002

### III-Sample Duplicate Analysis

AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-6	Oxygen	%	3.25	3.17	3.21	2.49
223193-6	Nitrogen	%	54.13	53.81	53.97	0.59
223193-6	Carbon Nonoxide	%	0.00	0.00	0.00	0.00
223193-6	Methane	%	13.28	12.54	12.91	5.73
223193-6	Carbon Dioxide	%	6.89	6.58	6.74	4.60

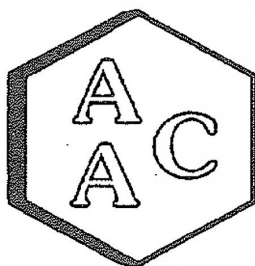
### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-6	Carbon Nonoxide	%	2.70	2.60	106.00	3.77
223193-6	Methane	%	8.46	8.48	100.75	0.24
223193-6	Carbon Dioxide	%	5.87	5.94	101.50	1.19

  
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Date Analyzed 5/8/2002

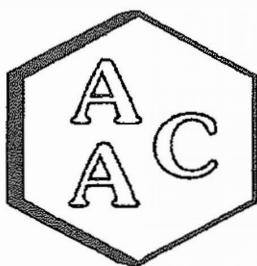
#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	Oxygen	%	ND
	Nitrogen	%	ND
	Carbon Nonoxide	%	ND
	Methane	%	ND
	Carbon Dioxide	%	ND

#### II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
Oxygen	%	10.50	9.59	9.59	0.00	91.33
Nitrogen	%	39.00	40.62	40.62	0.00	104.15
Carbon Nonoxide	%	2.50	2.37	2.41	1.67	95.60
Methane	%	2.00	2.18	2.13	2.32	107.75
Carbon Dioxide	%	2.50	2.40	2.38	0.84	95.60





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Date Analyzed 5/8/2002

### III-Sample Duplicate Analysis

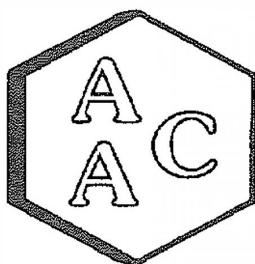
AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-26	Oxygen	%	1.06	1.03	1.05	2.87
223193-26	Nitrogen	%	41.57	40.78	41.18	1.92
223193-26	Carbon Nonoxide	%	0.00	0.00	0.00	0.00
223193-26	Methane	%	22.29	22.20	22.25	0.40
223193-26	Carbon Dioxide	%	14.35	14.40	14.38	0.35

### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-26	Carbon Nonoxide	%	2.60	2.53	102.60	2.73
223193-26	Methane	%	13.36	13.37	112.13	0.07
223193-26	Carbon Dioxide	%	9.47	9.51	92.10	0.42

  
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### Quality Control/Quality Assurance Report

Date Analyzed 5/9/2002

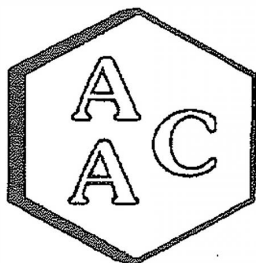
#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	Oxygen	%	ND
	Nitrogen	%	ND
	Carbon Nonoxide	%	ND
	Methane	%	ND
	Carbon Dioxide	%	ND

#### II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
Oxygen	%	10.50	9.35	9.35	0.00	89.05
Nitrogen	%	39.00	39.54	39.54	0.00	101.38
Carbon Nonoxide	%	2.50	2.50	2.48	0.80	99.60
Methane	%	2.00	2.17	2.11	2.80	107.00
Carbon Dioxide	%	2.50	2.53	2.51	0.79	100.80





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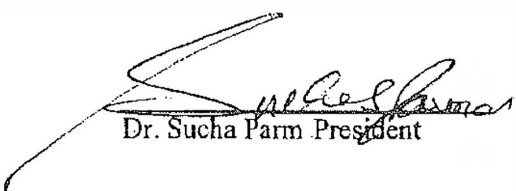
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### III-Sample Duplicate Analysis

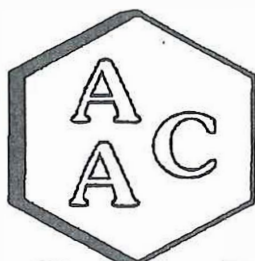
AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-46	Oxygen	%	0.41	0.36	0.39	12.99
223193-46	Nitrogen	%	39.23	39.67	39.45	1.12
223193-46	Carbon Nonoxide	%	0.00	0.00	0.00	0.00
223193-46	Methane	%	24.32	24.87	24.60	2.24
223193-46	Carbon Dioxide	%	16.04	16.04	16.04	0.00

### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup. Analysis	% Rec.	% RPD
223193-46	Carbon Nonoxide	%	2.59	2.62	104.20	1.15
223193-46	Methane	%	14.18	14.30	97.13	0.84
223193-46	Carbon Dioxide	%	10.37	10.39	94.40	0.19

  
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# Atmospheric Analysis & Consulting, Inc.

## Laboratory Analysis Report


Client Earth Tech  
 Project No. 44567 / 300-02-3193  
 Matrix Air  
 Units ppmv

Sampling Date 5/3/2002  
 Receiving Date 5/6/2002  
 Analysis Date 5/6/2002 to 5/10/2002  
 Report Date 5/14/2002

### EPA Method 25C

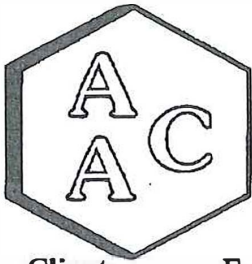
Detection Limit		0.3 ppmv
Client Sample ID	AAC ID	NMHC
26	223193-1	25.8
30	223193-2	10.9
31	223193-3	22.7
36	223193-4	32.9
44	223193-5	ND
53	223193-6	20.6
54	223193-7	125.5
60	223193-8	96.1
62	223193-9	50.3
63	223193-10	73.3
72	223193-11	26.9
78	223193-12	36.0
80	223193-13	92.6
81	223193-14	101.5
83	223193-15	19.7
84	223193-16	4.8
89	223193-17	206.2
92	223193-18	43.6
96	223193-19	40.1
99	223193-20	82.0

NMHC = Non-Methane Hydrocarbons as Methane

  
 Dr. Sucha Parmar  
 President







# Atmospheric Analysis & Consulting, Inc.

## Laboratory Analysis Report


**Client** Earth Tech  
**Project No.** 44567 / 300-02-3193  
**Matrix** Air  
**Units** ppmv

**Sampling Date** 5/3/2002  
**Receiving Date** 5/6/2002  
**Analysis Date** 5/6/2002 to 5/10/2002  
**Report Date** 5/14/2002

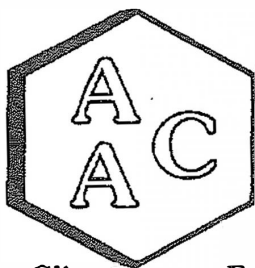
### EPA Method 25C

Detection Limit		0.3 ppmv
Client Sample ID	AAC ID	NMHC
102	223193-21	24.6
103	223193-22	13.8
104	223193-23	89.6
105	223193-24	40.8
128	223193-25	20.7
131	223193-26	27.1
138	223193-27	35.0
140	223193-28	116.1
141	223193-29	7.4
147	223193-30	84.1
149	223193-31	116.1
162	223193-32	41.6
163	223193-33	79.4
164	223193-34	21.9
165	223193-35	125.6
166	223193-36	152.0
167	223193-37	24.3
169	223193-38	97.5
173	223193-39	48.3
174	223193-40	113.6

NMHC = Non-Methane Hydrocarbons as Methane

  
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 President





## Atmospheric Analysis & Consulting, Inc.

### *Laboratory Analysis Report*


Client Earth Tech  
Project No. 44567 / 300-02-3193  
Matrix Air  
Units ppmv

Sampling Date 5/3/2002  
Receiving Date 5/6/2002  
Analysis Date 5/6/2002 to 5/10/2002  
Report Date 5/14/2002

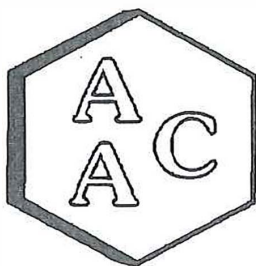
#### EPA Method 25C

Detection Limit		0.3 ppmv
Client Sample ID	AAC ID	NMHC
181	223193-41	77.7
184	223193-42	155.5
185	223193-43	36.2
192	223193-44	27.7
193	223193-45	33.0
195	223193-46	27.6
197	223193-47	4.3
206	223193-48	8.3
209	223193-49	72.0
1000	223193-50	9.6

NMHC = Non-Methane Hydrocarbons as Methane

  
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## Atmospheric Analysis & Consulting, Inc.

### Quality Control/Quality Assurance Report

Date Analyzed 5/6/2002

#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	NMHC	ppmv	ND

#### II-LCS

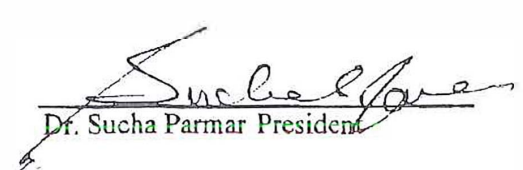
Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
NMHC	ppmv	86.50	78.28	81.48	4.01	104.09

#### III-Sample Duplicate Analysis

AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-1	NMHC	ppmv	3.40	3.45	3.43	1.46

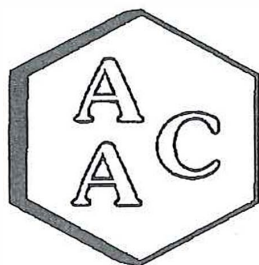
#### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-1	NMHC	ppmv	78.99	81.45	88.78	2.77

  
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## Atmospheric Analysis & Consulting, Inc.

### Quality Control/Quality Assurance Report

Date Analyzed 5/7/2002

#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	NMHC	ppmv	ND

#### II-LCS

Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
NMHC	ppm	86.50	87.72	88.24	0.59	100.59

#### III-Sample Duplicate Analysis

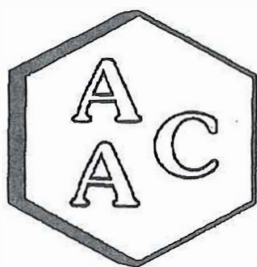
AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-6	NMHC	ppmv	2.76	2.67	2.72	3.31

#### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-6	NMHC	ppmv	84.44	82.89	93.58	1.66

  
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### Quality Control/Quality Assurance Report

Date Analyzed 5/8/2002

#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	NMHC	ppmv	ND

#### II-LCS


Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
NMHC	ppm	86.50	86.02	85.23	0.92	99.08

#### III-Sample Duplicate Analysis

AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-26	NMHC	ppmv	3.63	3.61	3.62	0.55

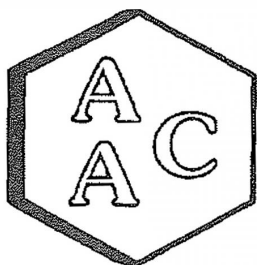
#### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-26	NMHC	ppmv	84.85	84.56	93.74	0.31

  
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### Quality Control/Quality Assurance Report

Date Analyzed 5/10/2002

#### I-Method Blank

	Analyte	Units	Sample Analysis
Method Blank	NMHC	ppmv	ND

#### II-LCS

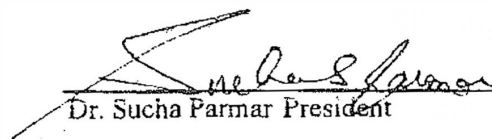
Analyte	Units	True Conc.	LCS Conc.	LCS Dup Conc.	% RPD	% Rec
NMHC	ppmv	86.50	86.41	87.41	1.15	101.16

#### III-Sample Duplicate Analysis

AAC ID	Analyte	Units	Sample Analysis	Duplicate Analysis	Mean	% RPD
223193-47	NMHC	ppmv	0.53	0.55	0.54	3.70

#### IV-Matrix Spike Analysis

AAC ID	Analyte	Units	Matrix Spike Analysis	Spike Dup Analysis	%Rec.	% RPD
223193-47	NMHC	ppmv	79.06	79.89	91.25	0.91

  
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**APPENDIX C**  
**NMOC EMISSIONS CALCULATIONS**

## APPENDIX C: Gary Sanitary Landfill

### Determination of Maximum NMOC Emissions At Closure:

Estimated Total Decomposable Waste: **6,210,000** cu. yards (From Design Capacity Report Submitted to IDEM)  
Estimated Density of Decomposable Waste: **1,200** pounds/ cu.yd. (From Design Capacity Report Submitted to IDEM)  
Estimated Mass of Decomposable Waste: **7,452,000,000** pounds

#### EPA Volume EMISSION CALCULATIONS

$$QLFG = 2LoR(e^{-kc} - e^{-kt})(Cnmc)(3.6 \times 10^{-9})$$

k=	<b>0.05</b> 1/yr	per AP-42 latest edition	
Lo=	<b>170</b> m <sup>3</sup> /Mg	per AP-42 latest edition	
c=	<b>0</b> yr since closure		
Cnmc =	<b>11.6</b> ppm as hexane	Tier II site specific sampling - 5/2002	
t	Total in-place refuse	R	<b>1997.5</b> Evaluation Date
(yr)	(Mg)	(Mg/yr)	<b>1997.5</b> Closed
42.5	3379482	79517	<b>1955</b> Opened

Uncontrolled NMOC: **1** mg/year at closure  
Uncontrolled NMOC: **1** tons/year at closure

### Determination of NMOC Emissions (Current):

Estimated Total Decomposable Waste: **6,210,000** cu. yards (From Design Capacity Report Submitted to IDEM)  
Estimated Density of Decomposable Waste: **1,200** pounds/ cu.yd. (From Design Capacity Report Submitted to IDEM)  
Estimated Mass of Decomposable Waste: **7,452,000,000** pounds

#### EPA Volume EMISSION CALCULATIONS

$$QLFG = 2LoR(e^{-kc} - e^{-kt})(Cnmc)(3.6 \times 10^{-9})$$

k=	<b>0.05</b> 1/yr	per AP-42 latest edition	
Lo=	<b>170</b> m <sup>3</sup> /Mg	per AP-42 latest edition	
c=	<b>4.5</b> yr since closure		
Cnmc =	<b>11.6</b> ppm as hexane	Tier II site specific sampling - 5/2002	
t	Total in-place refuse	R	<b>2002</b> Evaluation Date
(yr)	(Mg)	(Mg/yr)	<b>1997.5</b> Closed
47	3379482	79517	<b>1955</b> Opened

Uncontrolled NMOC: **1** mg/year (current)  
Uncontrolled NMOC: **1** tons/year (current)

**APPENDIX D**  
**CHAIN OF CUSTODY RECORD**

300-02-3193

1 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES					
Project No. <i>44567</i>			Field Logbook No.			<i>Method 25C</i> <i>Method 3C</i>					
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<i>2/2</i>	<i>5/6/02</i>	<i>5p</i>	<i>223193-1</i>		<i>X</i>	<i>X</i>					
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <i>5/6/02</i>	Time <i>9:00</i>
Sample Disposal Method:				Disposed of by: (Signature)				Date		Time	
SAMPLE COLLECTOR <i>Rob Watson</i>				ANALYTICAL LABORATORY							



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Air Toxics, Consulting &amp; Chemistry

Linda A. Farmer, Ph.D.  
PresidentP-20  
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300-02-3193

2 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name

Project Location

City of Gary / Gary landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Method 25C

Method 3C

Sample No. /  
Identification

Date

Time

Lab Sample  
NumberType of  
Sample

REMARKS

30

5/3/02

5p

223193-2

X

X

Relinquished by: (Signature)

*Rob Watson*

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Disposed of by: (Signature)

Date

Time

Sample Disposal Method:

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Air Toxic Consulting &amp; Compliance

Linda S. Palmer, Ph.D.  
President

MAY 23 2002 12:17PM HP LASERJET 3200



## CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary landfill</b>		Project Location <b>Gary Indiana</b>		ANALYSES					
Project No. <b>44567</b>		Field Logbook No.							
Sampler: (Signature)		Chain of Custody Tape No.		Method 25C Method 3C					
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample					REMARKS
31	5/3/02	5p	223193-3		X	X			
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)		Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)		Date	Time
Relinquished by: (Signature)				Date 5/5/02	Time 0900	Received for Laboratory: (Signature) <i>[Signature]</i>		Date	Time
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time
SAMPLE COLLECTOR  <b>Rob Watson</b>				ANALYTICAL LABORATORY					
				 <b>ATMOSPHERIC ANALYSIS &amp; CONSULTING</b> <small>John E. Farmer, Ph.D. President</small>					

Lucas E. Palmer, PhD  
Firestone



ATMOSPHERIC ANALYSIS & CONSULTING

300-02-3893

4 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name City of Gary / Gary Landfill			Project Location Gary Indiana			ANALYSES  Method 25C Method 3C						
Project No 44567			Field Logbook No									
Sampler: (Signature)			Chain of Custody Tape No.									
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS							
36	5/3/02	5pm	223/93-4									
Relinquished by: (Signature) [Signature]				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received for Laboratory (Signature) [Signature]				Date 5/6/02	Time 0900	
Sample Disposal Method				Disposed of by: (Signature)						Date	Time	
SAMPLE COLLECTOR Rob Watson				ANALYTICAL LABORATORY								




ATMOSPHERIC ANALYSIS &amp; CONSULTING

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Inches 3.7 mm, Ph. O  
Procedure

## CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary Landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 25C</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 3C</div> </div>					
Project No. <b>44567</b>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<b>44</b>	<b>5/3/02</b>	<b>5pm</b>	<b>223193-5</b>		✓	✓					
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <b>5/6/02</b>	Time <b>0900</b>
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time
SAMPLE COLLECTOR  <b>Rob Watson</b>				ANALYTICAL LABORATORY							



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P-25  
MAY 23 2002 12:19PM HP LASERJET 3200

300-02-3193

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# CHAIN OF CUSTODY RECORD

Client/Project Name <u>City of Gary / Gary Landfill</u>			Project Location <u>Gary Indiana</u>			ANALYSES  <i>Method 25C</i> <i>Method 3C</i>					
Project No. <u>44567</u>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<u>53</u>	<u>5/3/02</u>	<u>5 pm</u>	<u>22318-b</u>		X	X					
Relinquished by: (Signature) <u>[Signature]</u>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <u>[Signature]</u>				Date <u>5/6/02</u>	Time <u>0900</u>
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time
SAMPLE COLLECTOR  <u>Rob Watson</u>				ANALYTICAL LABORATORY							



Judith A. Farmer, PhD  
President  
ATMOSPHERIC ANALYSIS & CONSULTING  
Air Toxics, Compliance & Chemistry

300-02-3193

7/5/0

## CHAIN OF CUSTODY RECORD

Client/Project Name

Project Location

City of Gary/Gary landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No. /  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 2SC  
Method 3C

REMARKS

54

5/1/02

5pm

223193-7

X

X

Relinquished by: (Signature)

Rob Watson

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Presidents



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P-27

300-02-3193

8750

CHAIN OF CUSTODY RECORD

Client/Project Name <u>City of Gary / Gary landfill</u>		Project Location <u>Gary Indiana</u>	
Project No. <u>44567</u>		Field Logbook No.	
Sampler: (Signature)		Chain of Custody Tape No.	

ANALYSES

Method 25C  
Method 3C

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS
60	5/3/02	5p	223/93-8		

Relinquished by: (Signature) <u>Paul Wain</u>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature) <u>Chad A. L...</u>	Date <u>5/6/02</u>	Time <u>0900</u>
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Rob Watson

ANALYTICAL LABORATORY



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President



300-92-3193

9 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name

City of Gary / Gary Landfill

Project Location

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No. /  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 25C  
Method 3C

REMARKS

62 5/3/02 5p 223193-9

Relinquished by: (Signature)

[Signature]

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

5/5/02 0900

Sample Disposal Method.

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Air Toxics, Consulting &amp; Chemistry

Sasha L. Farmer, PhD  
President

300-02-3193

10/50

# CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary Landfill</b>		Project Location <b>Gary Indiana</b>	
Object No. <b>44567</b>		Field Logbook No.	
Sampler: (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES					REMARKS
63	5/3/02	5pm	223193-10		Method 25C	Method 3C				

Relinquished by: (Signature) <i>Rob Watson</i>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: Laboratory: (Signature) <i>[Signature]</i>	Date 5-6-02	Time 0900
Sample Disposal Method	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR  <b>Rob Watson</b>	ANALYTICAL LABORATORY
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Scott S. Farmer, Ph.D.  
President

HP LASERJET 3200  
MAY 23 2002 12:21PM

P.30  
MAY 23 2002 12:22PM HP LASERJET 3200

300-02-3193

11/50

# CHAIN OF CUSTODY RECORD

Client/Project Name <u>City of Gary / Gary landfill</u>		Project Location <u>Gary Indiana</u>	
Project No. <u>44567</u>		Field Logbook No.	
Sampler (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES <i>Method 25C</i> <i>Method 3C</i>						REMARKS
<u>72</u>	<u>5/3/02</u>	<u>5p</u>	<u>223193-11</u>		<u>X</u>	<u>X</u>					

Relinquished by: (Signature) <u>Rob Watson</u>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory (Signature) <u>Chris K...</u>	Date <u>5/6/02</u>	Time <u>0900</u>
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Rob Watson

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President

300-02-3193

12/50

# CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary landfill</i>		Project Location <i>Gary Indiana</i>	
Project No. <i>44567</i>		Field Logbook No.	
Sampler: (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES						REMARKS
<i>78</i>	<i>5/3/02</i>	<i>5pm</i>	<i>223/93-12</i>		<i>Method 25C</i>	<i>Method 3C</i>					

Relinquished by: (Signature) <i>[Signature]</i>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by Laboratory: (Signature) <i>[Signature]</i>	Date <i>5/6/02</i>	Time <i>0900</i>
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR  
*Rob Watson*

ANALYTICAL LABORATORY



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P-32

300-02-3193

1 #30/50

CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary/Gary landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES  <i>Method 25C</i> <i>Method 3C</i>						
Project No. <b>44567</b>			Field Logbook No.									
Sampler: (Signature)			Chain of Custody Tape No.									
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS	
80	5/1/02	5p	223193-13									
Relinquished by: (Signature) <i>Rob Watson</i>					Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)					Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date 5/1/02	Time 0900
Sample Disposal Method:					Disposed of by: (Signature)						Date	Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Steve S. Farmer, Ph.D.  
President



300-02-3193

14950

# CHAIN OF CUSTODY RECORD

Client/Project Name City of Gary / Gary Landfill			Project Location Gary Indiana			ANALYSES Method 25C Method 3C					
Project No 44567			Field Logbook No								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
81	5/3/02	5pm	223193-14								
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date 5/8/02	Time 0900
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time		
SAMPLE COLLECTOR  Rob Watson				ANALYTICAL LABORATORY							



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President



157/57

Client / Project Name		Project Location		CHAIN OF CUSTODY RECORD					
<u>City of Gary / Gary landfill</u>		<u>Gary Indiana</u>		<div style="float: right; font-weight: bold; margin-bottom: 5px;">ANALYSES</div> <div style="clear: both;"></div> <div style="position: relative; height: 100px;"> <span style="position: absolute; transform: rotate(-45deg); opacity: 0.5; font-style: italic;">Method 2SC</span> <span style="position: absolute; transform: rotate(-45deg); opacity: 0.5; font-style: italic;">Method 3C</span> </div>					
44567		Field Logbook No.							
Sample Amplifier (Signature)		Chain of Custody Tape No.							
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	Method 2SC	Method 3C	Other Methods	REMARKS	
83	5/3/02	5p	223/93-15		X	X			
Relinquished by: (Signature) <u>[Signature]</u>	Date	Time	Received by: (Signature)	Date	Time				
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time				
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature) <u>[Signature]</u>	Date 5/6/02	Time 0900				
Sample Disposal Method:	Disposed of by: (Signature)	Date	Time						
SAMPLE COLLECTOR  <u>Rob Watson</u>	ANALYTICAL LABORATORY  <div style="text-align: right;"> <p style="margin: 0; font-size: small;">ATMOSPHERIC ANALYSIS &amp; CONSULTING Air Toxic, Consulting &amp; Chemistry</p> </div>								



Sue A. Farmer, PhD  
President

ATMOSPHERIC ANALYSIS & CONSULTING

Air Toxic Consulting &amp; Chemistry



## CHAIN OF CUSTODY RECORD

17 of 30

Client/Project Name <b>City of Gary / Gary landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES					
Project No. <b>44567</b>			Field Logbook No.			<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 2SC</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 3C</div> </div>					
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
89	5/3/02	5 p	223193-17		X	5					
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date 5/6/02	Time 0900
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time

SAMPLE COLLECTOR

Rob Watson

ANALYTICAL LABORATORY



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Air Toxics, Consulting &amp; Chemistry

Sasha S. Farmer, PhD  
Fugate

MAY 23 2002 12:25PM HP LPSERJET 3200


18452

# CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary Landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES <div>Method 25C</div> <div>Method 3C</div>					
Project No. <b>44567</b>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
92	5/3/02	5p	223193-18		X	X					
Relinquished by: (Signature) <i>[Signature]</i>					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>			Date 5/6/02	Time 0900
Sample Disposal Method					Disposed of by: (Signature)					Date	Time

SAMPLE COLLECTOR  
**Rob Watson**

ANALYTICAL LABORATORY



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Air Toxics, Compliance & Chemistry

Scott S. Farmer, PhD  
President

300-02-5193

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## CHAIN OF CUSTODY RECORD

Client/Project Name City of Gary / Gary Landfill			Project Location Gary, Indiana			ANALYSES Method 25C Method 3C						
Project No 44567			Field Logbook No									
Sampler: (Signature)			Chain of Custody Tape No.									
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample								REMARKS
96	5/3/02	5p-	223193-19		✓	✓						
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>Chad R. Lee</i>				Date 5-5-02	Time 0900	
Sample Disposal Method				Disposed of by: (Signature)						Date	Time	
SAMPLE COLLECTOR Rob Watson				ANALYTICAL LABORATORY								



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Air Toxics, Compliance &amp; Characterization

Sue H. Palmer, Ph.D.  
PresidentHP LASERJET 3200  
MHY 23 2002 12:26PM

10/1/74

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1 Rob Watson



Air Toxics, Consulting & Chemistry

Lucas J. Farrow, Ph.D.  
President



## CHAIN OF CUSTODY RECORD

21930

Client/Project Name <i>City of Gary / Gary Landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES <i>Method 25C</i> <i>Method 3C</i>					
Project No. <i>44567</i>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<i>102</i>	<i>5/3/02</i>	<i>5p</i>	<i>223193-21</i>								
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <i>5-5-02</i>	Time <i>0900</i>
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time
SAMPLE COLLECTOR  <i>Rob Watson</i>				ANALYTICAL LABORATORY							



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John S. Farmer, Ph.D.  
President

[illegible]

# CHAIN OF CUSTODY RECORD

Client/Project Name <b>Gary landfill / City of Gary</b>			Project Location <b>Gary Indiana</b>			ANALYSES					
Project No. <b>94567</b>			Field Logbook No.			<div style="display: flex; justify-content: space-around;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 25C</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">Method 3C</div> </div>					
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<b>104</b>	<b>5/3/02</b>	<b>5pm</b>	<b>223193-23</b>								
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <b>5/5/02</b>	Time <b>0900</b>
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time		

SAMPLE COLLECTOR

**Rob Watson**

ANALYTICAL LABORATORY



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Air Toxics, Consulting & Chemistry

Stephen S. Palmer, Ph.D.  
President

MAY 23 2002 12:28PM HP LASERJET 3200

P. 43  
MAY 23 2002 12:28PM HP LASERJET 3200

CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary landfill</i>		Project Location <i>Gary Indiana</i>		ANALYSES <i>Method 25C</i> <i>Method 3C</i>					
Project No. <i>44567</i>		Field Logbook No.							
Sampler: (Signature)		Chain of Custody Tape No.							
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS				
<i>105</i>	<i>5/3/02</i>	<i>5pm</i>	<i>223193-24</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)		Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)		Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>Charles Allen</i>		Date <i>5/6/02</i>	Time <i>0900</i>
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time
SAMPLE COLLECTOR  <i>Rob Watson</i>				ANALYTICAL LABORATORY					



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Sucho S. Farmer, Ph.D.  
President

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MAY 23 2002 12:29PM HP LASERJET 3200

344-60-211-

25 of 50

# CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary Landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES  <i>Method 25C</i> <i>Method 3C</i>					
Project No. <b>44567</b>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
<b>128</b>	<b>5/3/02</b>	<b>5p</b>	<b>223193-25</b>		<b>X</b>	<b>X</b>					
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <b>5/6/02</b>	Time <b>0900</b>
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time

SAMPLE COLLECTOR  
**Rob Watson**

ANALYTICAL LABORATORY  
  
  
ATMOSPHERIC ANALYSIS & CONSULTING  
Air Toxics, Consulting & Chemistry  
  
Sucha S. Tarnawski, Ph.D.  
President



300-02-3193

25 of 50

## CHAIN OF CUSTODY RECORD

Project Name City of Gary / Gary landfill			Project Location Gary Indiana			ANALYSES					
Field No. 14567			Field Logbook No.			Method 25C Method 3C					
Collector: (Signature)			Chain of Custody Tape No.								
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
131	5/3/02	5p	223193-26		X	X					
Acquired by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)				Date	Time
Acquired by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Acquired by: (Signature)				Date	Time	Received by Laboratory: (Signature) <i>[Signature]</i>				Date 5/6/02	Time 0900
Sample Disposal Method:				Disposed of by: (Signature)				Date Time			

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Sue A. Parker, Ph.D.  
President



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HP LASERJET 3200  
MAY 23 2002 12:30PM

544-12-5112

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# CHAIN OF CUSTODY RECORD

ent/Project Name <i>City of Gary / Gary landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES <i>Method 2.5C</i> <i>Method 3C</i>					
Subject No. <i>44567</i>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample						REMARKS	
<i>138</i>	<i>5/3/02</i>	<i>5p</i>	<i>223193-27</i>		<i>X</i>	<i>H</i>					
Relinquished by: (Signature) <i>[Signature]</i>					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>			Date <i>5/5/02</i>	Time <i>0900</i>
Sample Disposal Method:					Disposed of by: (Signature)					Date	Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

*Rob Watson*



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Jackie A. Farmer, Ph.D.  
President

300-92-3193

28/50

## CHAIN OF CUSTODY RECORD

Client/Project Name

City of Gary / Gary Landfill

Project Location

Gary Indiana

Object No.

44567

Field Logbook No.

Sampler (Signature)

Chain of Custody Tape No.

ANALYSES

Method 25C  
Method 3CSample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
Sample

REMARKS

140

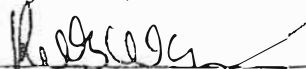
5/3/02

5p

223193-28

X +

Relinquished by: (Signature)



Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Linda S. Farmer, Ph.D.  
President

MAY 23 2002 12:30PM HP LASERJET 3200

## Air Toxics, Consulation &amp; Chemistry

MAY 23 2002 12:31PM HP LASERJET 3200

300-02-3193  
CHAIN OF CUSTODY RECORD

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ent/Project Name

Project Location

City of Gary/Gary landfill

Gary Indiana

ject No.

Field Logbook No.

44567

ampler: (Signature)

Chain of Custody Tape No.

ANALYSES

ample No. /  
entification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 2SC  
Method 3C

REMARKS

47 5/3/02 5p 223193-30

X X

linquished by: (Signature)

Rob Watson

Date

Time

Received by: (Signature)

Date

Time

linquished by: (Signature)

Date

Received by: (Signature)

Date

Time

linquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Chatterjee

5/5/02 0900

ample Disposal Method:

Disposed of by: (Signature)

Date

Time

AMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Julia K. Pomeroy, Ph.D.  
President





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MAY 23 2002 12:32PM HP LASERJET 3200

500-22-211

32450

# CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary Landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES <i>Method 25C</i> <i>Method 3C</i>						
Project No. <i>44567</i>			Field Logbook No.									
Sampler: (Signature)			Chain of Custody Tape No.									
Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample								REMARKS
<i>142</i>	<i>5/3/02</i>	<i>5p</i>	<i>223193-32</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time	
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <i>5-5-02</i>	Time <i>0900</i>	
Sample Disposal Method:				Disposed of by: (Signature)				Date				Time

SAMPLE COLLECTOR

*Rob Watson*

ANALYTICAL LABORATORY



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Air Toxics, Consulting & Chemistry

John J. Farnum, Ph.D.  
President



## CHAIN OF CUSTODY RECORD

Project Name

Project Location

City of Gary / Gary landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No. /  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 2SC  
Method 3C

REMARKS

163

5/3/02

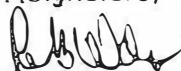
5pm

223193-33

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MAY 23 2002 12:33PM HP LASERJET 3200

Relinquished by: (Signature)



Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

5/6/02 0900

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY


Rob Watson



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Air Toxics, Consulting &amp; Chemistry

Julie A. Farmer, Ph.D.  
President

Client/Project Name		Project Location									
Project No.		Field Logbook No.									
Sampler: (Signature)		Chain of Custody Tape No.									
City of Gary/Gary Landfill		Gary Indiana									
44567											
Sample No./ Identification		Date	Time	Lab Sample Number	Type of Sample	ANALYSES Method 2SC Method 3C				REMARKS	
167		5/3/02	8:50p	223193-34	XH						
Relinquished by: (Signature) <i>[Signature]</i>					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>			Date 5/6/02	Time 0900
Sample Disposal Method:					Disposed of by: (Signature)					Date	Time
SAMPLE COLLECTOR Rob Watson					ANALYTICAL LABORATORY <div style="text-align: right;"> ATMOSPHERIC ANALYSIS &amp; CONSULTING Air Toxics, Consulting &amp; Chemistry</div>						



ATMOSPHERIC ANALYSIS &amp; CONSULTING

Air Toxics, Consulting &amp; Chemistry

500-02 7/10

357/50

# CHAIN OF CUSTODY RECORD

Int/Project Name

Project Location

City of Gary / Gary Landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

## ANALYSES

Method 25C  
Method 3C

Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS
165	5/3/02	5pm	223/93-35		

Relinquished by: (Signature)

*[Signature]*

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

*[Signature]*

5/5/02

0900

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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Air Toxics, Consultation & Chemistry

Justin S. Palmer, Ph.D.  
President

MAY 23 2002 12:34PM HP LASERJET 3200



300-02-3113

35 f50

## CHAIN OF CUSTODY RECORD

Project Name

Project Location

City of Gary / Gary landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
Sample

Method 2SC

Method 3C

REMARKS

146

5/3/02

5p

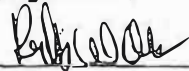
223/93-36

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Date

Time

Received by: (Signature)

Date

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Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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John A. Farmer, Ph.D.  
President

## CHAIN OF CUSTODY RECORD

Project Name

Project Location

City of Gary / Gary Landfill Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 25C  
Method 3C

REMARKS

167

5/3/02

5pm

223193-37

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Relinquished by: (Signature)

Reed Watson

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

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Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by Laboratory: (Signature)

Date

Time

5/5/02 0900

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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President

300-04-3175

38750

## CHAIN OF CUSTODY RECORD

ent/Project Name

City of Gary / Gary Landfill

Project Location

Gary Indiana

ject No/

44567

Field Logbook No

ampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 2.5C  
Method 3C

REMARKS

169 5/3/02 5pm 223193-38

X X

MAY 23 2002 12:36PM HP LASERJET 3200

Relinquished by: (Signature)

*[Signature]*

Date

Time

Received by: (Signature)

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Relinquished by: (Signature)

Date

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Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

Rob Watson

ANALYTICAL LABORATORY



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President



MAY 23 2002 12:36PM HP LASERJET 3200

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CHAIN OF CUSTODY RECORD

Client/Project Name Gary Landfill / City of Gary			Project Location Gary Indiana			ANALYSES						
Project No 44567			Field Logbook No			Method 25C Method 3C						
Sampler: (Signature)			Chain of Custody Tape No.									
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS							
173	5/3/02	5p	223/93-39		✓	✓						
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time	
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time	
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature)			Date	Time	
Sample Disposal Method.					Disposed of by: (Signature)					Date	Time	
SAMPLE COLLECTOR Rob Watson					ANALYTICAL LABORATORY							



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President

300-02-3193

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## CHAIN OF CUSTODY RECORD

Client/Project Name City of Gary / Gary landfill			Project Location Gary Indiana			ANALYSES Method 25C Method 3C					
Project No 44567			Field Logbook No								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
174	5/3/02	5pm	223193-40		✓	✓					
Relinquished by: (Signature) Rob Watson				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) [Signature]				Date 5/6/02	Time 0900
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time		
SAMPLE COLLECTOR Rob Watson				ANALYTICAL LABORATORY							



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President

300-02-3193

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CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary Landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES <i>Method 35C</i> <i>Method 3C</i>					
Project No <i>44567</i>			Field Logbook No								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample						REMARKS	
<i>18/</i>	<i>5/1/02</i>	<i>5p</i>	<i>223193-47</i>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					
Relinquished by: (Signature) <i>[Signature]</i>					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received by: (Signature)			Date	Time
Relinquished by: (Signature)					Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>			Date <i>5/6/02</i>	Time <i>0900</i>
Sample Disposal Method.					Disposed of by: (Signature)					Date	Time
SAMPLE COLLECTOR  <i>Rob Watson</i>					ANALYTICAL LABORATORY						



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Steve E. Farmer, Ph.D.  
President



300-02-3193

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## CHAIN OF CUSTODY RECORD

Client/Project Name

Project Location

City of Gary / Gary landfill

Gary Indiana

Project No.

Field Logbook No.

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
SampleMethod 25C  
Method 3C

REMARKS

84

5/3/02

5pm

223193-42

X X

Relinquished by: (Signature)



Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



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President

300-02-3193

73 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name <i>City of Gary / Gary Landfill</i>		Project Location <i>Gary Indiana</i>	
Project No. <i>44567</i>		Field Logbook No.	
Sampler (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES						REMARKS
<i>185</i>	<i>5/3/02</i>	<i>5p</i>	<i>223193-73</i>		✓	✓					

Relinquished by: (Signature) <i>Rob Watson</i>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature) <i>Chris</i>	Date <i>5/6/02</i>	Time <i>0900</i>
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

*Rob Watson*

ANALYTICAL LABORATORY



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Air Toxics Consulting &amp; Chemistry

Justin S. Farmer, Ph.D.  
President

# CHAIN OF CUSTODY RECORD

500-000 7113

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Client/Project Name <u>City of Gary / Gary Landfill</u>		Project Location <u>Gary Indiana</u>	
Project No. <u>44567</u>		Field Logbook No.	
Sampler: (Signature)		Chain of Custody Tape No.	

Method 25C  
Method 3C

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES	REMARKS
192	5/3/02	5pm	223193-14		✓ ✓	

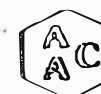
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Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature) <u>[Signature]</u>	Date <u>5/3/02</u>	Time <u>0900</u>
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

Rob Watson

ANALYTICAL LABORATORY



ATMOSPHERIC ANALYSIS & CONSULTING

Air Toxics, Consulting & Chemistry

Scott J. Farmer, Ph.D.  
President




P-64  
MAY 23 2002 12:39PM HP LASERJET 3200

CHAIN OF CUSTODY RECORD

75 7/52

Client/Project Name City of Gary / Gary Landfill			Project Location Gary Indiana			ANALYSES Method 25C Method 3C					
Project No 44567			Field Logbook No								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
193	5/3/02	5pm	223193-45		✓	✓					
Relinquished by: (Signature) [Signature]				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) [Signature]				Date 5/5/02	Time 0900
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time
SAMPLE COLLECTOR Rob Watson				ANALYTICAL LABORATORY							



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President

MAY 23 2002 12:40PM HP LASERJET 3200

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CHAIN OF CUSTODY RECORD

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Client/Project Name <i>City of Gary / Gary Landfill</i>			Project Location <i>Gary Indiana</i>			ANALYSES <i>Method 25C</i> <i>Method 3C</i>					
Project No.			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample							REMARKS
<i>195</i>	<i>5/3/02</i>	<i>5pm</i>	<i>223193-46</i>		<i>✓</i>	<i>✓</i>					
Relinquished by: (Signature) <i>[Signature]</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <i>5/5/02</i>	Time <i>0900</i>
Sample Disposal Method:				Disposed of by: (Signature)						Date	Time
SAMPLE COLLECTOR <i>Rob Watson</i>				ANALYTICAL LABORATORY							



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Sucha S. Farmer, Ph.D.  
President

300-02-3197

47 of 50

## CHAIN OF CUSTODY RECORD

Client/Project Name <b>City of Gary / Gary landfill</b>			Project Location <b>Gary Indiana</b>			ANALYSES  <i>Method 2SC</i> <i>Method 3C</i>					
Object No. <b>44567</b>			Field Logbook No.								
Sampler: (Signature)			Chain of Custody Tape No.								
Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	REMARKS						
<b>197</b>	<b>5/3/02</b>	<b>5pm</b>	<b>223593-47</b>		<b>X</b>	<b>X</b>					
Relinquished by: (Signature) <i>Rob Watson</i>				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received by: (Signature)				Date	Time
Relinquished by: (Signature)				Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>				Date <b>5/6/02</b>	Time <b>0900</b>
Sample Disposal Method:				Disposed of by: (Signature)				Date	Time		

SAMPLE COLLECTOR

Rob Watson

ANALYTICAL LABORATORY



ATMOSPHERIC ANALYSIS &amp; CONSULTING

Air Toxics, Consulting &amp; Chemistry

John S. Farmer, Ph.D.  
President

300-02-3193

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## CHAIN OF CUSTODY RECORD

Client/Project Name

Project Location

City of Gary / Gary Landfill

Gary Indiana

Project No

Field Logbook No

44567

Sampler: (Signature)

Chain of Custody Tape No.

ANALYSES

Sample No./  
Identification

Date

Time

Lab Sample  
NumberType of  
Sample

REMARKS

206

5/3/02

5p

223193-48

Method 25C  
Method 3C

Relinquished by: (Signature)

*Rob Watson*

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method:

Disposed of by: (Signature)

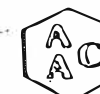
Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



ATMOSPHERIC ANALYSIS &amp; CONSULTING

Air Toxics Consulting &amp; Chemistry

Sue & Partner, P.O.  
Presidents

300-92-3173

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## CHAIN OF CUSTODY RECORD

Client/Project Name City of Gary / Gary Landfill		Project Location Gary Indiana	
Object No 44567		Field Logbook No	
Sampler: (Signature)		Chain of Custody Tape No.	

Sample No./ Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES						REMARKS
209	5/3/02	5p	223193-49		Method 25C	Method 3C					

Relinquished by: (Signature) <i>[Signature]</i>	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
Relinquished by: (Signature)	Date	Time	Received for Laboratory: (Signature) <i>[Signature]</i>	Date 5/5/02	Time 0900
Sample Disposal Method:	Disposed of by: (Signature)			Date	Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



ATMOSPHERIC ANALYSIS &amp; CONSULTING

Air Toxics, Consulting &amp; Chemistry

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Presidents

300-02-3193

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## CHAIN OF CUSTODY RECORD

Client/Project Name

Project Location

City of Gary / Gary Landfill

Gary Indiana

Project No

Field Logbook No

ANALYSES

44567

Sampler: (Signature)

Chain of Custody Tape No.

Sample No. / Identification	Date	Time	Lab Sample Number	Type of Sample	ANALYSES	REMARKS
1000	5/3/02	5pm	223193-50		Method 25C Method 3C	

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received by: (Signature)

Date

Time

Relinquished by: (Signature)

Date

Time

Received for Laboratory: (Signature)

Date

Time

Sample Disposal Method.

Disposed of by: (Signature)

Date

Time

SAMPLE COLLECTOR

ANALYTICAL LABORATORY

Rob Watson



ATMOSPHERIC ANALYSIS &amp; CONSULTING

Air Toxics, Compliance &amp; Chemistry

Linda S. Farmer, Ph.D.  
President